

Abstract of the Disclosure

An interface device is connected to a host by an I/O bus and provides hardware and processing mechanisms for accelerating data transfers between a network and a storage unit, while controlling the data transfers by the host. The interface device includes hardware circuitry for processing network packet headers, and can use a dedicated fast-path for data transfer between the network and the storage unit, the fast-path set up by the host. The host CPU and protocol stack avoids protocol processing for data transfer over the fast-path, freeing host bus bandwidth, and the data need not cross the I/O bus, freeing I/O bus bandwidth. The storage unit may include RAID or other multiple drive configurations and may be connected to the INIC by a parallel channel such as SCSI or by a serial channel such as Ethernet or Fibre Channel. The interface device contains a file cache that stores data transferred between the network and storage unit, with organization of data in the interface device file cache controlled by a file system on the host. Additional interface devices may be connected to the host via the I/O bus, with each additional interface device having a file cache controlled by the host file system, and providing additional network connections and/or being connected to additional storage units.